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Beliefs about alcohol and the college experience, locus of self, and college undergraduates' drinking patterns

Lizabeth A. Crawford, Katherine B. Novak

Abstract

The purpose of this study is to assess the extent to which locus of self (institutional versus impulse), measured using the Twenty Statements Test (TST), moderates the relationship between beliefs about alcohol and the college experience (BACE) and alcohol use among college undergraduates. Although the majority of our respondents listed more idiosyncratic personal characteristics and preferences than consensual social roles in response to the TST, the number of students classified as institutionals was notably higher than what has been reported within the literature. In opposition to our hypothesis that BACE would affect levels of alcohol consumption primarily among these individuals, our results indicated that the perception that alcohol use is integral to the college experience had a relatively minimal effect on drinking among respondents who defined themselves in terms of institutional roles. Moreover, multiple social roles themselves appeared to reduce the effects of BACE on levels of alcohol consumption. More impulse-oriented personal characteristics and preferences did not exhibit this moderating influence. Thus, our findings suggest that role occupation may be more important than locus of self in shaping students' susceptibility to beliefs about drinking and college life.

The college years are frequently viewed as a timeframe within which alcohol abuse is appropriate. Drawing on the results of Wolburg's (2001) qualitative study of college undergraduates' motivations for binge drinking, Crawford and Novak (2006) provide a measure of beliefs about alcohol and the college experience (BACE) that assesses the extent to which students perceive themselves as occupying a unique, albeit temporary, status that entitles them to drink irresponsibly with few negative consequences. Not surprisingly, this index is strongly associated with students' personal drinking behaviors. The purpose of this study is to determine the extent to which the contents of students' self-concepts affect this relationship.

In his classic article on the shift in locus of self, Turner (1976) suggests that a growing proportion of people define their real, or true, selves in terms of spontaneous emotions and other impulsive experiences, rather than in terms of institutionalized social roles. In premodern societies, where economic activities occur within the context of the family, the number of available social roles tends to be limited. Yet these roles define most, if not all, of one's inter-actions with others, and people readily identify with these relatively clear-cut sets of social expectations. In modern societies, on the other hand, social institutions are relativistic, role boundaries are permeable, and positive role outcomes are not guaranteed. As a result, many individuals, who view their role-related behaviors as potentially unrewarding and inauthentic,

may come to define their true or real selves in terms of their more spontaneous, unscripted reactions to their environments (Turner 1976).

This trend has been documented using college students' responses to the Twenty Statements Test (TST), a standard measure of the content of the self- concept. The TST, developed by Kuhn and McPartland (1954), requires survey participants to respond to the statement ''Who am I?'' by writing down the first twenty things that come to mind. It was Kuhn and McPartland's contention that, as reflections of the society in which they participate, the contents of people's self-concepts should be relatively stable and thus subject to this type of quantitative assessment (Stryker 1980).

Responses to the TST are typically coded using the following four-category scheme: physical characteristics, social roles attached to the statuses one occupies (e.g., student), descriptions of one's personal characteristics or preferences, and other responses not inherently linked to institutional structures (e.g., ''I am a spot in the universe''; McPartland 1965). While people who anchor what Turner (1976) refers to as the real self in institutions should respond to the TST by listing more consensual social roles than idiosyncratic self-descriptions (institutionals), individuals who exhibit an impulse orientation (impulsives) should cite predominantly idiosyncratic traits, preferences, and other non-institutionally based characteristics as self-defining (Turner 1976; Zurcher 1977).

In the 1950s, over 50 percent of a college sample listed more social roles than personal characteristics and preferences in response to the TST (Hartley 1968; cf. Zurcher 1977). By the late 1960s, the percentage of institutionals was substantially lower, with many students providing more adjectives than roles as self-descriptions (Zurcher 1972, 1977). More recent studies (Babbitt and Burbach 1990; Grace and Cramer 2002; Roscoe and Peterson 1983; Snow and Phillips 1982) show that this trend has persisted and is not merely a refection of the individually oriented culture of the 1960s and 1970s. Notably, in Grace and Cramer's (2002) analysis, most (75%) of students' responses to the TST were non-consensual personal characteristics or preferences, and the majority of these individuals (over 90%) were classified as having an impulsive-oriented locus of self.

In his earlier work, Turner (1976) suggests that impulsives, who are inclined to view their spontaneous reactions to people and events (internal states) as significant and meaningful, may be more likely than institutionals to use alcohol and other substances to enhance their emotions. However, insofar as they view heavy drinking as a part of the student role, institutionally oriented youth may also exhibit high levels of alcohol consumption.

Along with declines in the power and authenticity accorded to traditional institutions, modernization and rationalization have led to the demystification and de-enhancement of everyday life. As a result, transformative processes traditionally rooted in religious rituals must be obtained through secular means, which often include the use of alcohol and other drugs (Hawdon 2005). The drinking culture that exists on this nation's college campuses reflects this shift, and alcohol abuse among college students has itself become institutionalized (Butler 1993).

Although some students reject the notion that heavy drinking is an important part of college life, this perception is widespread (Crawford and Novak 2006; NIAAA 2002; Osberg et al. 2010).

Hypotheses

We hypothesize that locus of self will moderate the relationship between the perception that the abuse of alcohol is integral to the college experience and drinking behavior. Students who define their real selves in terms of impulse should, as a group, exhibit relatively high levels of alcohol use. Individuals who are institutionally oriented should drink more moderately, unless they believe that alcohol abuse is integral to the student role. Thus, we expect that BACE will affect levels of alcohol use primarily among students who define their real selves in terms of social institutions. Institutionally oriented individuals who do not regard college as the timeframe for heavy drinking should have low levels of alcohol use, whereas institutionals who associate the abuse of alcohol with the student role should exhibit high levels of alcohol consumption.

The distinction between the latter individuals and students who define their real selves in terms of impulse is important from a theoretical standpoint. Among impulsives, drinking is assumed to be motivated by the subjective experience of alcohol intoxication (an internal state). Presumably, drinking among institutionals who regard the abuse of alcohol as part of college life is motivated by their desire to fulfill what they perceive to be the (external) obligations of the student role.

Methods

Sample

A survey including the TST as well as measures of students' beliefs about alcohol and the college experience (BACE), their levels of alcohol use, and demographic/background information was administered to approximately 300 college undergraduates attending a midsized private university during the spring of 2008. Students enrolled in introductory sociology, psychology, and an advanced nursing course completed the questionnaire in classroom settings. Although all of the students present in the classes in which the survey was given opted to complete the questionnaire, there was, in most cases, the usual rate of absences (about 5–10% of students per session). This, and the fact that students enrolled in these courses were not necessarily representative of all undergraduate students at this university, must be taken into consideration when interpreting the results of this survey. In total, 332 undergraduate students completed the survey form. Given our focus on perceptions of the role of student on drinking behavior, we included only individuals of traditional college age (under 24) in our sample (n = 314).

Measures

Locus of Self. The extent to which students locate their real selves in impulse—idiosyncratic characteristics and preferences—versus social institutions was measured using the TST (Kuhn and McPartland 1954). This measure was coded in the standard manner, such that each response

to the question ‘‘Who am I?’’ was placed in one of four categories: physical characteristics (Category A), social roles (Category B), descriptions of one’s personal characteristics or preferences (Category C), and other responses not inherently linked to institutional structures (Category D). All ratings were made by an undergraduate research assistant trained in the use of this coding scheme. A second rater independently coded a random sample of 15 percent of the surveys. This second rater agreed with the original coding of the responses 97 percent of the time, indicating a high degree of reliability for this measure.

A preliminary analysis yielded the following mean number of responses in each category among the undergraduate sample: Category A = .45, Category B = 6.09, Category C = 8.88, and Category D = .34. Thus, as in previous studies (see Grace and Cramer 2002), Category B and C responses were far more common than Category A and D responses.

Using a modal response approach (Grace and Cramer 2002), we constructed a dichotomous indicator of locus of self, where individuals who listed more Category B responses to the TST than responses in any other category were scored as 0, and respondents who listed more Category C responses than responses in any other category received scores of 1. Since this measure was designed to capture which self-locus, impulse or institutional, is dominant, seven students with an equal number of B and C responses were scored as missing on this variable. One student who had more Category A than B or C responses was also scored as missing. None of the students in our sample had a modal number of responses in category D. We will compare the effects of the modal response variable to those associated with students’ total number of Category B and total number of Category C responses, respectively.

We computed another, in this case interval-level, measure of the content of respondents’ self-concepts by subtracting the number of Category B responses from the number of Category C responses, such that high scores indicate an impulse-oriented, and low scores indicate an institutionally based, locus of self. While this measure is similar to the modal response variable described above, it provides a more detailed, and potentially more accurate, reflection of the degree to which students self-identify in terms of idiosyncratic preferences and characteristics versus institutionally based roles. The eight students scored as missing on the modal response variable (including the individual with a modal number of A responses) received scores of 0 on this measure because they listed an equal number of impulse and institutionally oriented statements on the TST.

Beliefs about Alcohol and the College Experience. The extent to which respondents believed that drinking is an integral part of the college experience was measured using six items (e.g., ‘‘As college students, we have the freedom to drink.’’) that emerged as categories reflective of this perception in Wolburg’s (2001) qualitative study of students’ motives for binge drinking (see Crawford and Novak 2006 for a further discussion of this index). Each question was scored using a four-point Likert scale, with response options ranging from 0 ‘‘strongly disagree’’ to 3 ‘‘strongly agree,’’ and the six items were summed to form a composite index of students’ beliefs about drinking and college life. Scores on this measure ranged from 0 to 18. An analysis of

internal consistency indicated that the BACE index had a high degree of reliability among the undergraduates surveyed ($\alpha = .79$).

Control Variables. A number of other measures predictive of undergraduates' drinking behaviors included in Crawford and Novak's (2006) earlier analysis of the effects of BACE on undergraduate drinking served as control variables in this study. Gender was measured as the dummy variable female (0 = male, 1 = female). Greek participation and high school drinking were also measured as 0/1 dummy variables (0 = no, 1 = yes). Friends' use of alcohol was measured on a 4-point scale ranging from 0 = friends do not drink a lot to 3 = friends drink a lot, and students' beliefs about the effects of alcohol on perception, affect, and behavior were measured using 12 items from Brown, Christiansen, and Goldman's (1987) Alcohol Expectancy Questionnaire (AEQ). The selected items focused on alcohol's effects on social behavior (e.g., ''Alcoholic beverages make parties more fun.''), arousal (e.g., ''People have stronger feelings when they are drinking alcohol.''), and tension reduction (e.g. ''Drinking alcohol relaxes people.'').

Each of the expectancy questions was coded as either 0 (''disagree'') or 1 (''agree'') and summed to yield a composite index with scores ranging from 0 to 12. A number of respondents ($n = 16$) were missing on one or more of the expectancy items. The criteria for mean imputation (Graham 2009; Roth, Switzer, and Switzer 1999) were satisfied: the index was high in internal consistency ($\alpha = .78$), and missing data were dispersed across the individual items. We had at least 7, and in most cases 11, valid data points for respondents with missing information. Thus, we replaced missing values with the mean score on the index items for which respondents had valid scores.

Finally, preliminary analyses indicated that the (advanced) nursing students ($n = 43$) listed significantly more roles than other respondents in response to the TST. This effect persisted when gender, year in school, and age were held constant. Thus, we included a dummy variable reflecting this status (0 = other, 1 = nursing) as a statistical control in all higher-order analyses. Neither year in school nor age was significantly associated with responses to the TST or drinking behavior. As both measures were highly correlated with major status, we did not include these variables in our subsequent analyses.

Alcohol Use. The dependent variable used in this study was constructed by summing respondents' answers to four questions designed to assess both the frequency and volume of their alcohol consumption: average number of drinks consumed per week, average number of drinks consumed per sitting, number of times intoxicated during the month prior to the completion of the survey, and the number of days during the past 2 weeks during which respondents consumed five or more alcoholic beverages—a standard indicator of binge drinking (Wechsler and Toben 2001). Respondents were instructed to write their answer to each of the drinking questions (e.g., ''What is the average number of drinks you consume in a week?'') in the space provided on the survey, yielding four interval-level measures. Scores ranged from 0 to 40 on the drinks per week variable, 0 to 17 on drinks per sitting, 0 to 30 on times intoxicated during the past month, and 0 to 7 on the number of times five or more drinks were consumed in the past 2 weeks. Each

variable was standardized prior to the construction of the drinking index to give the four items equal weight ($\alpha = .91$). Given its components, high scores on this measure indicate heavy (or irresponsible) drinking.

Results

Descriptive statistics on the variables included in this analysis are presented in Table 1. Although the majority of the survey respondents (60%) gave more impulse-based (Category C) than institutionally oriented (Category B) responses to the TST, this tendency was substantially less pronounced than what has been reported within the literature (Babbitt and Burbach 1990; Grace and Cramer 2002; Roscoe and Peterson 1983; Snow and Phillips 1982).

The relatively high degree of variability on the college experience measure, with the mean score falling below the midpoint of the scale, was more consistent with prior research (Crawford and Novak 2006). This suggests that students differ in the degree to which they believe that heavy drinking is integral to the college experience and that many college undergraduates do not subscribe to this view.

Bivariate correlations between measures of students' self-concepts, their BACE, and the other variables under investigation are presented in Table 2. Most notable is the differential impact of the measures of self on drinking behavior. While an orientation toward impulse, over institutionally based roles, was not associated with alcohol use, the number of statuses listed in response to the TST was inversely related to composite drinking scores.

We examined this relationship further and tested for hypothesized interactions between locus of self, BACE, and levels of alcohol consumption using ordinary least squares regression. Interactions between BACE and the measures of self-loci were modeled by taking the cross-product of each variable pair.

Multicollinearity is common in regression models with cross-product interactions, especially when one of the interaction's components is a dichotomous variable (e.g., the modal impulse measure). In order to reduce multicollinearity between the main effects and interaction terms in our multivariate analyses (bivariate correlations ranged from .73 to .88), we centered our interval-level variables by subtracting the mean from respondents' observed scores. This procedure, which yields a mean of zero on each variable, while retaining its standard deviation, reduces correlations between main effects and multiplicative interaction terms and makes it easier to discern the nature of their effects. The mean centering procedure does not affect the direction or magnitude of the coefficients in the regression model (Aiken and West 1992; Smith and Sasaki 1979).

Approximately 8 percent of the sample had missing data on one or more of the variables included in the regressions, but fewer than 5 percent were missing on any one measure (Table 1). Given this, we used listwise deletion of missing cases in the regression analyses. Substituting

Table 1. Descriptive Statistics

Variable	*M*	SD	Range	*N*
Locus of Self				
No. of Category B	6.09	4.82	0 to 20	301
No. of Category C	8.88	6.25	0 to 20	301
Modal Impulse	.60	.49	0 to 1	293
Impulse-Institution	2.80	9.84	-20 to 20	301
BACE	5.95	3.19	0 to 15	311
Female	.62	.49	0 to 1	314
Drink HS	.45	.50	0 to 1	314
Greek	.38	.49	0 to 1	312
Nursing Major	.14	.34	0 to 1	314
Friends' Drinking	1.62	.86	0 to 3	314
Alcohol Expectancies	7.59	3.01	0 to 12	314
Drinking Index	-.04	3.55	-3.57 to 12.21	306

Note: BACE = beliefs about alcohol and the college experience

Table 2. Bivariate Correlations †

	1	2	3	4	5	6	7	8	9	10	11	12
1. Category B	1.00											
2. Category C	-.57***	1.00										
3. Modal	-.68***	.81***	1.00									
4. Category C - B	-.85***	.92***	.84***	1.00								
5. BACE	.07	-.05	-.04	-.07	1.00							
6. Female	.08	.15*	.09	.05	-.04	1.00						
7. Drank HS	-.02	.03	-.02	.03	.23***	-.01	1.00					
8. Greek	.03	-.12*	-.08	-.09	.26***	-.06	.12*	1.00				
9. Nursing	.19**	.01	-.04	-.09	.04	.27***	.03	-.01	1.00			
10. Friends	-.13*	.09	.06	.12*	.46***	-.11	.24***	.24***	.03	1.00		
11. Expectancies	.04	.03	-.03	.00	.41***	.02	.12*	.14*	.07	.26	1.00	
12. Drinking	-.16**	.05	.04	.11	.50***	-.21***	.37***	.31***	.04	.43***	.29***	1.00

Note: BACE = beliefs about alcohol and the college experience
* $p < .05$
** $p < .01$
*** $p < .001$
† Pairwise deletion of missing cases yielded sample sizes ranging from 276 to 314

imputed values conditional on respondents' scores on other model variables for missing data yielded a similar pattern. As suggested by Allison (2002), we present the results of the analyses based on actual observations.

The results of the regressions are presented in Table 3. In an initial set of analyses, we included separate measures of students' self-reported Category B and C responses. In a second series of regressions, we replaced these variables with the dichotomous locus of self-measure based on individuals' modal response to the TST. In a final set of analyses, we used the interval-level measure constructed by subtracting respondents' Category B from Category C responses.

In each set of analyses, we started with the base model, which included measures of students' self-concepts, BACE, gender, drinking history, Greek participation, major (other or nursing), friends' drinking, and alcohol expectancies (columns 1, 3, and 5 in Table 3). We then added the cross-product of the measure of self under investigation and the BACE index (columns 2, 4, and 6 of Table 3). This enabled us to determine whether locus of self (conceptualized in three different ways) moderated the BACE–alcohol use relationship in the hypothesized manner.

Listwise deletion of missing cases yielded a sample size of 289 for the first and third set of regressions. The sample size was slightly smaller (n = 281) for the second set of regressions, including the modal response variable, as the eight students with the same number of impulse-oriented and institutionally based statements were excluded from these analyses. As shown in Table 3, across analyses, the variables under investigation explained a substantial proportion of the variability (well over 40%) in students' drinking behaviors.[1]

Of all the variable examined, BACE was the most strongly associated with students' levels of alcohol consumption. Albeit to a lesser degree, locus of self also influenced respondents' drinking. In particular, the inverse relationship between the number of roles listed in response to the TST and alcohol use, initially shown in Table 2, persisted when we included the various control variables in our analysis (Table 3, column 1). The (third) interval-level measure of locus of self (impulse–institutional) also had a direct effect on students' drinking. As shown in column 5 of Table 3, as the number of Category C (idiosyncratic preferences and characteristics), relative to Category B (institutionally based roles), responses to the TST increased so did students' levels of alcohol consumption. The modal impulse measure had a similar impact on drinking behavior (Table 3, column 3), but this effect was not statistically significant.

The purpose of this study is to determine whether the content of students' self-concepts moderates the BACE–drinking relationship. As shown in column 2 of Table 3, the cross-product interaction between the BACE index and the number of institutional roles provided in response to the TST was strong enough to reach statistical significance. This was not the case for the cross- product of BACE and the number of (impulse-oriented) preferences and characteristics listed, which was subsequently dropped from the analysis.

We used the following formula, provided by Aiken and West (1992: 12), to determine the direction of the interaction between BACE and number of institutional roles (Category B responses) listed in response to the TST: Y-hat = $(b_1 + b_3Z)X + (b_2Z + b_0)$, where Y-hat = predicted composite drinking score, X = BACE, and Z = number of Category B responses. The regression coefficients (b_1, b_2, and b_3) are shown in column 2 of Table 3 (rounded to two decimal places). The term b_0 is the constant (also from column 2 of Table 3), plus the coefficient for each

[1] Additional analyses excluding the eight individuals missing on the modal response measure from the first and third set of regressions (for a constant n of 281) yielded the same pattern of results.

Table 3. OLS Regressions Predicting Levels of Alcohol Consumption

	1		2		3		4		5		6	
Column	*b*	Beta	*b*	Beta	*b*	Beta	*b*	Beta	*b*	Beta	*b*	Beta
Constant	-.69*		-.66*		-1.00*		-1.01**		-.59		-.57	
Locus of Self												
No. of Institutional	-.69*	-.20	-.12**	-.17								
No. of Impulse	-.02	-.04	-.02	-.03								
Modal Impulse					.54	.08	.54	.08				
Impulse-Institution									.05**	.13	.04*	.12
BACE	.35***	.32	.34***	.32	.33***	.30	.22*	.21	.35***	.32	.34***	.31
Female	-1.14**	-.16	-1.19**	-.16	-1.19**	-.17	-1.19**	-.17	-1.30***	-.18	-1.34***	-.18
Drink HS	1.64***	.23	1.70***	.24	1.68***	.24	1.71***	.25	1.62***	.23	1.70***	.24
Greek	1.14**	.16	1.10**	.15	1.15**	.16	1.15**	.16	1.22***	.17	1.16**	.16
Nursing	1.07*	.11	1.11*	.11	.97*	.10	1.00*	.10	.87	.09	.94*	.09
Friend Drinking	.50*	.12	.54*	.13	.65**	.16	.65**	.16	.53*	.13	.56**	.14
Expectancies	.10	.08	.08	.07	.07	.06	.06	.06	.09	.08	.09	.07
BACE × No. of Institution			-.03**	-.13								
BACE × Modal Impulse							.16	.12				
BACE × Impulse - Institution											.01**	.12
n	289		289		281		281		289		289	
R-Square	.438***		.453***		.419***		.424***		.426***		.440***	
△ R-Square			.015**				.005				.014**	

* $p < .05$
** $p < .01$
*** $p < .001$

of the three dummy control variables (drank in high school, Greek participation, and nursing major) multiplied by its sample mean (Table 1).[2]

Beliefs about alcohol and the college experience and the number of Category B responses were each varied from low (one standard deviation below the mean) to high (one standard deviation above the mean), yielding four predicted drinking scores. For example, the following equation was used to compute a predicted drinking score for hypothetical students with high scores on the BACE index and a high number of Category B responses to the TST: Y-hat = [.344 + (-.027 × 4.817)]3.190 +[(-.123 × 4.817) + (-.66) + (-1.190 × .624) + (1.704 × .450) + (1.095 × .378) + (1.107 × .137)] = .02.

The predicted drinking scores at one standard deviation below, and one standard deviation above, the sample mean on the BACE index and the measure of self based on the number of Category B responses are displayed graphically in Figure 1. As shown here, defining oneself in terms of multiple social roles appeared to buffer the effect of the perception that drinking is an integral part of being a student on levels of alcohol consumption. Although this latter belief substantially

[2] Interval-level control variables dropped out of the equation given their (centered) mean scores of 0.

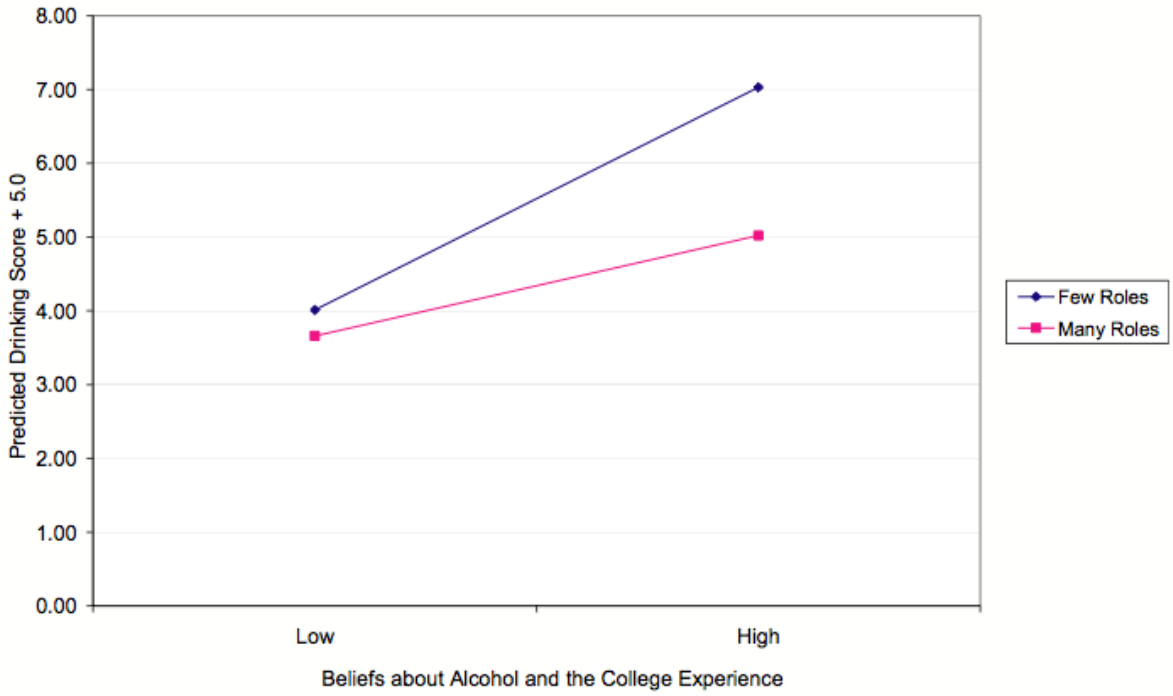

Figure 1. Effects of Beliefs about Alcohol and the College Experience on Alcohol Use by Number of Roles (n = 289).

increased alcohol use among students who listed few roles on the TST, its impact on those individuals providing multiple institutional roles in response to the ''Who am I?'' question was relatively minimal (about one-third of the former effect). Additional analyses yielded an identical pattern when the role of student was dropped from the count on the total roles listed variable, and the role of student itself (i.e., whether respondents specifically listed student in response to the TST) did not affect the BACE–alcohol use relationship (data not shown).

The difference in the effect of drinking on BACE across levels of the dichotomous modal response variable (Table 3, column 4) was similar in nature to the interaction depicted in Figure 1, but this effect was not strong enough to reach statistical significance (p = .12). The interaction between BACE scores and the interval-level locus of self-measure, constructed by subtracting the number of social roles provided from the number of idiosyncratic preferences/characteristics listed in response to the TST (Table 3, column 6), was, however, significant at the .01 level.[3] A procedure identical to that described earlier was used to determine the direction of this effect using regression coefficients from column 6 of Table 3 (X = BACE and Z = Category B - Category C responses). The results of these calculations are presented in Figure 2.

[3] The measure of alcohol expectancies did not significantly influence the relationship between any of the three measures of self and levels of alcohol consumption (data not shown), suggesting that interactions between beliefs about alcohol, TST responses, and drinking behaviors are specific to views about alcohol use and the role of student.

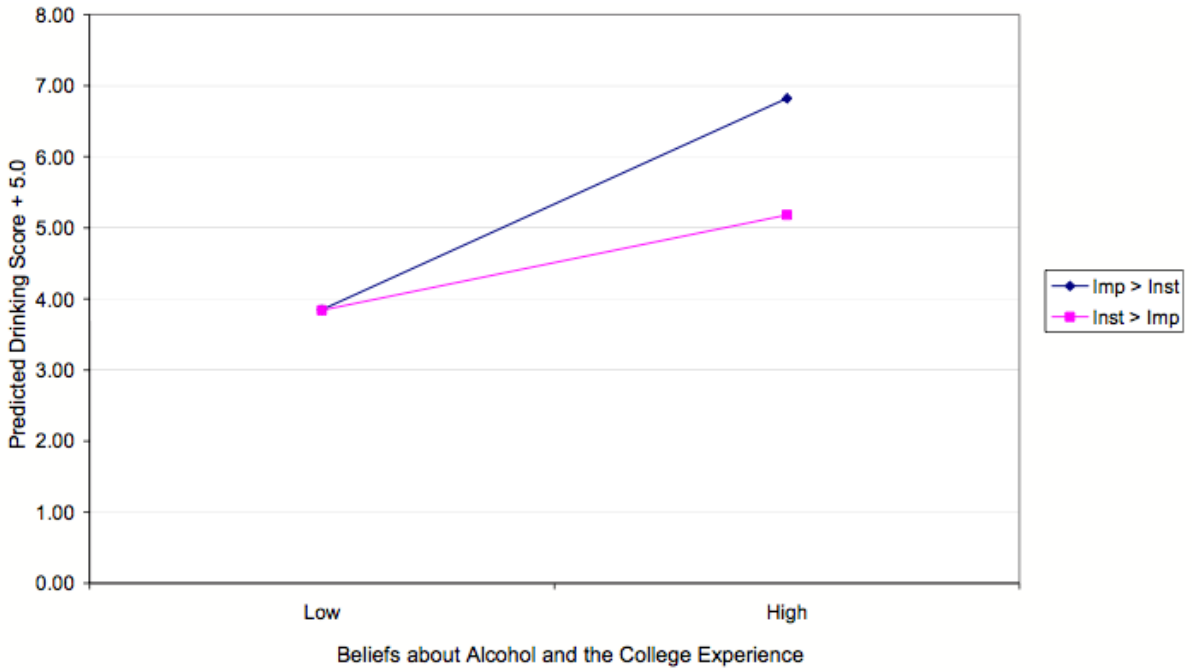

Figure 2. Effects of Beliefs about Alcohol and the College Experience on Alcohol Use by Interval Level Locus of Self-Measure (n = 289).

As shown in Figure 2, the more institutional roles students listed, relative to adjectives and personal preferences, in response to the TST, the weaker the relationship between the belief that the abuse of alcohol is a legitimate student behavior and respondents' personal levels of alcohol use. This effect was similar in direction and magnitude to the interaction including the measure of self based on number of social roles (Figure 1).

Discussion

Consistent with research conducted since the 1970s (Babbitt and Burbach 1990; Grace and Cramer 2002; Roscoe and Peterson 1983; Snow and Phillips 1982), the majority of our sample (60%) listed more impulse-oriented characteristics and preferences than social roles in response to the TST. Still, substantially more of our respondents were classified as institutionals than has been the case in these earlier studies. Perhaps our findings can be attributed to the nature of our sample. Earlier studies focused on students attending large public institutions, whereas our sample was from midsized private school. Alternatively, the relatively high proportion of institutionals in our sample could reflect a shift in the mind-set of college undergraduates in this country. This would support Turner's (1976) contention that the tendency for people to anchor their real, or true, selves in impulse may be context, or cohort, specific. Given the limitations of our convenience sample, further research is needed to determine the relevance of these trends for the ways in which students define themselves and to assess the replicability of our findings.

As expected, locus of self moderated the effect of BACE on drinking. As Turner (1976) suggests, there was some evidence that students who defined themselves in terms of their impulsive experiences had higher levels of alcohol use than their more institutionally oriented counterparts, but this was only the case among individuals who believed that the abuse of alcohol was a legitimate student activity. In opposition to our hypothesis that the belief that alcohol abuse is integral to the college experience would increase drinking primarily among college undergraduates who defined their real selves in terms of social institutions, it was among students classified as impulsives that the alcohol beliefs–alcohol use relationship was strongest. Thus, institutionally oriented respondents who associated the abuse of alcohol with the student role did not exhibit the high levels of alcohol consumption we predicted. There are two potential explanations for these findings, both of which emphasize the transitional nature of the student status.

College undergraduates have exited adolescence but have not yet entered mature adulthood (Arnett 2004). They occupy an interstructural position (Turner 1969) and are, as a result, exempt from the social constraints that accompany other statuses. Individuals in interstructural positions are viewed as existing outside of the broader community. Thus, the norms governing behavior within society at large are temporarily suspended, giving them greater free- dom. Anthropologists refer to this as a liminal experience (Turner 1969; Van Gennep 1960). The lack of normative constraint associated with liminality supports a social environment within which individuals are able to engage in behaviors, such as the abuse of alcohol, deemed inappropriate for members of other groups with few repercussions (Butler 1993; Crawford and Novak 2006).

Students scoring high on the BACE index perceived the college years as a timeframe within which the abuse of alcohol, and its consequences, are readily tolerated. Perhaps individuals who located their real selves in impulse were more willing than their institutionally oriented peers to take advantage of this perceived freedom. Although this is certainly plausible, this argument does not explain why institutionally oriented respondents who viewed drinking as integral to the student role had such (unexpectedly) low levels of alcohol consumption. An alternative framework, focusing on the link between social interaction and the structure of the self, better accounts for this as well as our other findings.

According to Stryker's (1980) identity theory, the contents of people's self-concepts directly reflect the statuses they occupy and their associated role relationships. From this perspective, people define themselves in terms of a particular social role insofar as they have multiple relationships with others based on their occupation of the status upon which that role is based. A person listing multiple Category B responses to the TST would, then, be someone who occupies multiple statuses and regularly enacts the role expectations attached to these positions throughout the course of their social interactions. When this occurs, the statuses themselves are internalized, becoming salient socially based identities.

Our results suggest that having multiple identities reduces the risk for heavy drinking within the context of a liminal experience. The number of social roles (Category B responses) students

listed on the TST was inversely associated with their levels of alcohol consumption. The interval-level measure of self-locus, constructed by subtracting the number of Category B from Category C responses, yielded a similar pattern, while neither the modal response (Category C > B) variable nor the number of preferences / characteristics (Category C responses) affected students' drinking behaviors. Moreover, respondents who listed multiple social roles in response to the TST (those with a high number of Category B responses and low scores on the interval-level locus of self-measure) were less readily influenced by the belief that alcohol use is integral to the college experience than individuals who listed few such socially based identities, whereas the number of self-reported personal characteristics and preferences, as well as respondents' modal response to the TST, had no effect on the alcohol beliefs–drinking relationship.

This suggests that it was not alcohol's subjective effects that motivated heavy drinking among respondents who located their real selves in impulse and regarded the abuse of alcohol as integral to the college experience. More likely, it was the lack of normative constraint they experienced given their limited role-based identities (reflected in a low number of Category B responses to the TST) that put them at risk for heavy drinking. Among respondents who regarded the abuse of alcohol as part of college life, individuals who defined themselves in terms of multiple social roles drank much more moderately.

Albeit inconsistent with our hypotheses, this pattern of result fits well within the literature on the effects of role occupation on youth drinking. Prior studies show declines in alcohol use among youth as they transition into adult work and familial roles (Bachman et al. 1997; Curren, Muthen, and Harford 1998; Miller-Tutzauer, Leonard, and Windle 1991; Peralta and Christie-Mizell 2009), as well as a delay in the protective effects of education on the risk for heavy drinking and alcohol-related problems until the mid-twenties (Muthen and Muthen 2000), after college is completed and graduates have entered the labor force. During the college years, students have higher levels of alcohol use and problem drinking than non-students within their age-group (Barnes et al. 2010; Chen, Dufour, and Yi 2004/2005; Gfroerer, Greenblatt, and Wright 1997).

Service requirements and other activities invoking sets of role expectations that counter the lack of normative regulation associated with the student status may provide an avenue for intervention during this timeframe (Crawford and Novak 2006). Participation in paid work, as well as structured leisure activities, religious activities, and community service, has been associated with low levels of drinking among college undergraduates in a number of prior studies (CASA 1994; Hawdon 1999; Weitzman and Chen 2005; Weitzman and Kawachi 2000; White et al. 2008). Our results suggest that having multiple role involvements may be especially effective in reducing heavy drinking among students who view the abuse of alcohol as integral to the college experience.

Unfortunately, we did not have detailed data on the various statuses our study respondents occupied or on the nature of the role expectations attached to these positions, making it impossible to directly assess the relationship between role occupation, BACE, and levels of alcohol consumption. The cross-sectional nature of our data also renders the causal direction of

the patterns we observed somewhat speculative. Further research is needed to address these issues as well as to evaluate the generalizability of our findings.

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